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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,120	10/14/2003	Tung-Shen Lin	7257/71248	4514

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Cooper & Dunham LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/685,120

Applicant(s)

LIN ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003 and 06 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date rec'd 06 Nov 2003.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

1. The disclosure is objected to because of the following informalities:

The name of the chemical compound required by the present claims is consistently misspelled throughout the application, including the claims. The name is also incomplete and incorrect if the name is intended to represent only the compound of the formula shown at the top of page 4. The compound shown at the top of page 4 is 10,10'-di-9-phenanthrenyl-9,9'-bianthracene. The name utilized by applicant throughout the application indicates the bonding positions on the anthracene ring structures (i.e. the bonds between the two anthracene ring structures, and the positions to which the phenanthracene (a.k.a. phenanthrene) ring structures are bonded), but does not indicate the bonding position on the phenanthracene ring structures.

Appropriate correction is required.

2. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The scope of "9,9'-bianthry-10,10-phenanthrcene" as recited in present claim 1 and "9,9'-bianthry-10,10'-phenanthrcene" as recited in present claims 2 and 5 is not clear. It is not clear if this terminology requires a compound represented by the formula shown at the top of page 4 of the specification (also note the lack of a prime mark on the second "10" in the name recited in claim 1). The name does not accurately/completely reflect the chemical structure shown on page 4 for reasons noted in the objection to the disclosure.

The limitations implied by “adapted to apply on an organic electroluminescent device”, as recited in claim 5, are not clear. It is not clear if this language requires some modification of the “9,9'-bianthry-10,10'-phenanthrene” and/or if the claimed medium must comprise something in addition to the “9,9'-bianthry-10,10'-phenanthrene”.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 2001-097897.

The only positive limitation of the medium of present claim 5 is the requirement for “9,9'-bianthry-10,10'-phenanthrene”. Presuming “9,9'-bianthry-10,10'-phenanthrene” requires the compound represented by the formula shown on page 4 of the present specification, the prior art anticipates claim 5. The compound represented by formula (A-9) on page 7 of the Japanese language document is the same as the compound represented by the formula on page 4 of the present specification.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-097897 in view of Inoue et al. (US 5,635,308).

A machine-assisted translation of JP 2001-097897 is provided with this Office action. In the machine-assisted translation, for example, see the abstract and paragraphs [0001], [0035]-[0037], [0052]-[0054] and [0083]-[0102].

Presuming “9,9’-bianthry-10,10-phenanthrene” as recited in present claim 1 and “9,9’-bianthry-10,10’-phenanthrene” as recited in present claim 2 requires the compound represented by the formula shown on page 4 of the present specification, the prior art discloses the required compound and teaches its use in the light emitting layer of an organic electroluminescent (EL) devices. The compound represented by formula (A-9) on page 7 of the Japanese language document is the same as the compound represented by the formula on page 4 of the present specification.

JP ‘897 discloses various multilayered EL device structures. One device structure disclosed in JP ‘897 has the configuration: anode/hole-injection layer/luminous layer/electron-injection layer/cathode. The hole-injection layer also functions as a hole-transporting layer as taught, for example, in paragraph [0089]. The electron-injection layer also functions as an electron-transporting layer as evident by paragraphs [0095]-[0101].

JP '897 does not explicitly disclose a device structure comprising the multilayered structure required by present claims 1-4 having, in the order listed: an electron-transporting layer, an electron-injection layer, and a cathode.

The subdivision of an electron-injecting/transporting layer into an electron-transporting sublayer and an electron-injecting sublayer was known in the art at the time of the invention. For example, see column 29, line 52-c. 30, l. 45, c. 31, l. 18-24 and c. 31, l. 45-54 in the '308 patent to Inoue et al. It would have been an obvious modification to one of ordinary skill in the art at the time of the invention to provide the device of JP '897 with separate electron-transporting and electron-injection layers as such multilayered structures were known in the art at the time of the invention as evidenced by Inoue et al.

With respect to present claims 2-4, JP '897 teaches that the device may be constructed so as to provide white light emission, and white light emission may be obtained by using a plurality of light-emitting layers. For example, see paragraphs [0083]-[0088]. JP '897 does not provide a specific example of a device comprising a first light-emitting layer comprising the compound of formula (A-9) and a second light-emitting layer that emits blue light. It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to utilize the compound of formula (A-9) to make a device capable of emitting white light since the prior art specifically teaches that the devices may be constructed so as to provide white light emission. It would have been within the level of ordinary skill of a worker in the art at the time of the invention, as a matter of routine experimentation, to determine suitable combinations of different light-emitting layers in order to provide a white light emitting device in which one of the light-

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emitting layers comprises a compound of formula (A-9) as suggested by JP '897. Further with respect to present claim 3, which requires one of the light-emitting layers to comprise a hole-transporting material and a blue light emitting material, it was known in the art at the time of the invention to combine materials having different functions such as taught, for example, at c. 31, l. 55-c. 32, l. 5 of the '308 patent to Inoue et al.

7. Miscellaneous:

The term --layer-- should be inserted after "electron-injection" in the last line of claim 1.

8. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
December 10, 2005



**MARIE YAMNITZKY
PRIMARY EXAMINER**

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